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09/744,393	03/05/2001	Samuel W. D. Steel	36-1553	5720

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EXAMINER

LE, MIRANDA

ART UNIT	PAPER NUMBER
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2167

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/744,393

Applicant(s)

STEEL ET AL.

Examiner

Miranda Le

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. This communication is responsive to Amendment filed 10/01/2004.
2. Claims 2-5, 7-19 are pending in this application. Claims 2, 7, 11 are independent claims. In the Amendment, claim 4 has been amended, no claims have been canceled, added. This action is made Final.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2-5, 7-9, 11-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al. (US Patent No. 6,298,343 B1).

Chang anticipated independent claims 2, 7, 11, by the following:

**As to claims 2, 7,** Chang teaches a method of generating an index entry for a record in a semi structured database, the database comprising a plurality of records, each record comprising one or more fields having a plurality of characters therein (col. 5, lines 17-29, col. 4, lines 1-41), the method including:

(i) analyzing each field in accordance with a predetermined criterion so as to identify an entry within said field” at col. 3, lines 29-54, col. 5, lines 31-63;

“(ii) generating at least one index entry representing a concordance between an identified entry and the record corresponding to the identified entry” at col. 5, lines 31-63, Fig. 7a;

“for each of a plurality of predetermined formats, in (i) further including searching said field to identify a sequence of characters having a format corresponding to the predetermined format, said identified sequence of characters being deemed to constitute an identified entry” at col. 3, lines 29-54, col. 5, lines 1-63, col. 4, lines 1-41, Fig. 6, Fig. 7a;

“(iii) for at least one field, defining any characters not identified as an entry in step (i) as a free text entry” at col. 5, lines 1-63, Fig. 6, Fig. 7a.

**As per claim 11**, Chang teaches “apparatus for accessing a semi-structured database in accordance with an input request for information, wherein the semi-structured database comprises a plurality of items, each item comprising one or more fields having a plurality of characters therein, at least one of the fields being a free text field (col. 3, lines 17-29, col. 5, lines 1-63), the apparatus comprising:

“means for accessing a data store comprising a plurality of index entries each representing a concordance between an entry in a field of an item and an item” at col. 5, lines 1-63;

“input means for receiving a request for information, the request comprising a natural language phrase” at col. 3, lines 17-29, col. 4, lines 1-19;

“a parser for parsing the natural language phrase to determine components of the phrase” at col. 3, lines 29-54, col. 4, lines 1-29;

“a slot filler arranged to identify, from the components of the phrase determined by the parser, one or more object components of the phrase representing an object of the request, the slot filler being further provided with a slot-and-filler request, wherein each slot thereof corresponds to a group of index entries and wherein the slot filler is arranged to allocate at least one of the identified object components to a respective slot of the slot-and-filler request” at col. 5, lines 1-63, Fig. 6;

“and a query constructor for accessing the data store, wherein the query constructor is arranged to compare the allocated component with index entries within a group corresponding to the slot of the allocated component so as to identify an index entry corresponding thereto and to use the identified index entry to identify an item in the semi-structured database” at col. 3, lines 17-54, col. 5, lines 1-63.

**As to claims 3, 8,** Chang teaches “the free text entry comprises at least one free text word defined by a sequence of alphanumeric characters, the method further comprising the steps of:

“(iv) identifying at least one free text word in a field by comparing the free text entry with at least one selection criterion defining one or more predetermined characteristics of a free text word” at col. 5, lines 1-63, col. 4, lines 1-41, col. 3, lines 29-54, Fig. 6, Fig. 7a;

“(v) generating a plurality of index entries representing a concordance between the selected free text words determined in (iv) and the respective records” at col. 4, line 42 to col. 5, line 64.

**As to claims 4, 9,** Chang teaches “the records within the semi-structured database are further arranged in groups of records, each group of records being located in a heading field and being identified by at least one heading entry, wherein the method further comprises, for each heading field:

“(iv) identifying heading entries by comparing each heading field with each of a plurality of selection criteria, each selection criterion defining one or more predetermined characteristics of a respective heading entry” at col. 5, lines 1-63, Fig. 6;

“(v) generating a plurality of index entries representing a concordance between the heading entries determined in (iv) and the group of records in the heading field” at col. 5, lines 1-63, Fig. 6.

**As per claim 5,** Chang teaches “arranging the index entries into groups of index entries in accordance with predetermined criteria” at col. 5, lines 1-63, Fig. 6.

**As per claim 12,** Chang teaches “an index generator comprising a processor arranged, in respect of each item in the semi-structured database, to analyze each field in accordance with a predetermined criterion so as to identify an entry within said field, and to generate at least one index entry representing a concordance between an identified entry and the item corresponding to the identified entry, and store the generated index entry in the data store” at col. 5, lines 1-63, col. 3, lines 29-54.

“wherein for each of a plurality of predetermined formats, the processor is arranged to search said free text field to identify a sequence of characters having a format corresponding to

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the predetermined format, said identified sequence of characters being deemed to constitute an identified entry” at col. 3, lines 17-54, col. 5, lines 1-63, col. 4, lines 1-19.

**As per claim 13**, Chang teaches “wherein for the free text field, the processor is arranged to define any data not identified as an entry as a free text entry” at col. 5, lines 1-63, col. 4, lines 1-19.

**As per claim 14**, Chang teaches “the free text entry comprises at least one free text word defined by a sequence of alphanumeric characters, the processor being arranged to identify at least one selected free text word for a field by comparing the free text entry with at least one selection criterion defining one or more predetermined characteristics of a selected free text word” at col. 5, lines 1-63, col. 4, lines 1-41.

**As per claim 15**, Chang teaches “the items within the semi-structured database are further arranged in groups of items, each group being located in a heading field and being identified by at least one heading entry, wherein the processor is arranged to identify a heading entry by comparing each heading field with each of a plurality of selection criteria defining one or more predetermined characteristics of a respective heading entry, and is arranged to generate index entries representing a concordance between such heading entries and the group of items in the heading field” at col. 5, lines 1-63, col. 4, lines 1-19, col. 3, lines 29-54.

As per claim 19, Chang teaches “the data store is part of the apparatus” at col. 3, lines 17-54.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 10, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al. (US Patent No. 6,298,343), in view of Wical et al. (US Patent No. 6,061,675).

As per claim 10, Chang teaches “input means for receiving the request” at col. 3, lines 17-29;

“a parser for parsing the request to determine the components of the request” at col. 3, lines 29-54;

“and a query constructor for accessing a database” at col. 3, lines 17-29,

“wherein the query constructor is arranged to compare each of the components allocated to a slot in the slot-and-filler request to one or more index entries in a respective group of index



entries, to select the index entries for records which have entries including any of the components and, to use the index entries to determine the location of each respective record in the semi-structured database” at col. 5, lines 1-63, col. 4, lines 1-41.

Chang teaches the slot filler at col. 5, lines 1-63, but Chang does not specifically teach “a slot filler for determining whether the request includes any verb components forming a verb or verb group; and, if the request includes any verb components, the slot filler determines the position of the verb or verb group within the request, and determines any subject components representing the subject of the request and any object components representing the object of the request using the position of the verb or verb group; and, if the request includes no verb components, the slot filler determines any components to be object components, wherein each slot corresponds to one of the group of index entries and wherein the slot filler is arranged to allocate at least one component to a respective slot of a slot-and-filler request”. However, Wical teaches:

“a slot filler for determining whether the request includes any verb components forming a verb or verb group” at col. 63, lines 54-67, col. 69, lines 19-62;

“and, if the request includes any verb components, the slot filler determines the position of the verb or verb group within the request, and determines any subject components representing the subject of the request and any object components representing the object of the request using the position of the verb or verb group” at col. 63, lines 54-67, col. 69, lines 19-62, col. 83, lines 1-6, col. 73, lines 5-67,

“and, if the request includes no verb components, the slot filler determines any components to be object components, wherein each slot corresponds to one of the group of index

entries and wherein the slot filler is arranged to allocate at least one component to a respective slot of a slot-and-filler request” at col. 63, lines 54-67, col. 69, lines 19-62, col. 73, lines 5-67 ;

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Chang with the teachings of Wical to include the claimed limitations because it would provide an accurate and detailed classification system for storage and retrieval of the information that best utilized the vast amounts of information.

**As per claim 16**, Wical teaches “the slot filler is arranged to identify verb components forming a verb or verb group in the parsed request and to allocate any such identified verb components to a slot in accordance with a predetermined mapping between verb components and slots” at col. 63, lines 54-67, col. 69, lines 19-62, col. 73, lines 5-67.

**As per claim 17**, Wical teaches “the slot filler is arranged to identify any subject components in accordance with the position of the verb or verb group within the request and to allocate any such identified subject components to a slot in accordance with a predetermined mapping between subject components and slots” at col. 63, lines 54-67, col. 69, lines 19-62, col. 73, lines 5-67, col. 83, lines 1-6.

**As per claim 18**, Wical teaches “in the absence of identifying verb components, the slot filler is arranged to deem any components to be object components” at col. 63, lines 54-67, col. 69, lines 19-62, col. 73, lines 5-67.

*Response to Arguments*

7. Applicant's arguments filed 10/01/2004 have been fully considered but they are not persuasive.

Applicant argues that:

(a) Chang's reference does not teach/suggest claim 2's feature of "analyzing each field in accordance with a predetermined criterion so as to identify an entry within said field".

(b) Chang's reference does not teach/suggest claim 2's feature of "for at least one field, defining any characters not identified as an entry in step (i) as a free text entry".

(c) Chang does not teach a slot filler arranged to allocate component.

(d) Chang and Wical do not teach claims 10, 16-18.

The Examiner respectfully disagrees for the following reasons:

Per (a), Chang teaches a feature table corresponding to the categorized general category where said feature table has entries representative of the feature and characteristics of said category and each entry has a corresponding address pointing to a position in a corresponding search table (col. 2, lines 1-4). And, a feature table and a search table corresponding to said category or subcategory is searched to find database entries pertinent to said search inquiry (col. 2, lines 13-16). Note that the feature table of Chang (see Fig. 3, col. 3, line 66 to col. 4, line 4) consists of plurality of fields (i.e. For Currency Symbols, For English Words Starting with an Upper case Characters, For Number Representative of a Year or Years...) having entries corresponding to database entries (col. 4, lines 13-16); and the predetermined criterion corresponds to the fields in Fig. 3 (i.e. For Chinese characters, For General Foreign Language 1).

Per (b), Chang teaches that for at least one field (i.e. field 50 in Fig. 3) defining any characters not identified as an entry in step (i) as a free text entry in Fig. 3.

It is noted that “a free text entry” corresponds to the field 50 (i.e. For Other English Words) of the feature table in Fig. 3, wherein the characters are not identified (i.e. neither is there English, Chinese, General Foreign Language 1).

Per (c), in regards to claim 11, Chang teaches a user is allowed to provide a search inquiry unrestricted as to form and in a language of his or her choice (col. 3, lines 19-21, Fig. 1b, element 10, e.g. Search Inquiry in a Format of Any Type or Language), and the inquiry can be a phrase or a sentence” (col. 3, line 24). This equates to “input means for receiving a request for information, the request comprising a natural language phrase” as claimed.

Chang teaches slot and filter as an inquiry has been categorized into one or more available categories (i.e. an inquired phrase or sentence is parsed), and Categorize the Search Inquiry into One or More Categories Where There is a Feature Table for Each Category - Point Filter Step (see Fig. 3, element 14). Further, Chang discloses once the search inquiry has been received, it may optionally be processed to identify the most pertinent words (col. 3, lines 25-27) (col. 3, lines 39-41), and Find the Most pertinent Matches from the Feature Table and the Corresponding Search Table Position (see Fig. 3, element 15). Note that the object components as claimed correspond to “categories” of Chang, and “the group index” can be shown in Fig. 7a, which depicts the entry “Alf” of the feature table as a group consisting of Alf, Alfred.

Chang teaches the query constructor is arranged to compare the allocated component with index entries within a group at Fig. 7a, col. 5, lines 1-63. (i.e. an entry from the search table is

retrieved and compared to the search inquiry (col. 5, lines 4-7). The group corresponds to the group consisting of Alf, Alfred in Fig. 7a. Note that after comparing the allocated component (i.e. Alf in feature table of Fig. 7a) with the index entries within a group (i.e. Alf, Alfred) corresponding to the slot of the allocated component, an item in the semi-structured database should be identified (i.e. item corresponds to Address 9, and find the corresponding entries from the database, col. 3, lines 4-5).

Per (d), Wical discloses a knowledge catalog wherein a user's natural language input is parsed to analyze which part is an adjective, a noun, an adverb, and a verb. It is brought to Applicant's attention that these portions of the cited Wical reference have described the mechanism to allocate those parts into appropriate forms for attachment into the knowledge catalog so that words in the natural language phrase can be allocated to be searched.

Further, Applicants seems to be suggesting that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Chang is directed to a method for analyzing, categorizing, processing user-submitted search information to permit a database to be searched regardless of the format and language of the user-submitted information (Abstract).

Wical is directed to a method for classifying terminology utilizing a knowledge catalog, which provides a unique infrastructure to accurately represent concepts that define knowledge (col. 2, lines 66-67).

Chang teaches the slot filler to identify the most pertinent words (col. 3, line 26, Fig. 3), but Chang does not explicitly teach if the slot-and-filler request includes no verb components, the slot filler determines any components to be object components (claims 10, 18), a predetermined mapping between verb component/subject components and slots of a slot-and-filler request (claim 16, claim 17). Wical, however, teaches that if the input terminology consists of nouns, adjectives, adverbs, or verbs, then the knowledge catalog processor 600 converts the input terminology to a nominal form (i.e. determines any components to be object components). For example, the verb “to fish” is converted to “fishing”, and the verb “performing” is converted to “performance” (col. 63, lines 62-67, Fig. 7), (i.e. a predetermined mapping between verb component/subject components and slots of a slot-and-filler request).

Since both Chang and Wical disclose the same field that is a method for accessing a database in accordance with a user’s input request for information. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references because Wical’s suggestion of determining any components to be objects components and mapping between verb components and slots of a slot and filler request (col. 63, lines 54-67) would have allowed Chang’s users to efficiently input a search inquiry unrestricted as to format as well as language where the search inquiry is processed in an intelligent manner to facilitate the searching and retrieving of information most likely to be desired by the user.

*Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

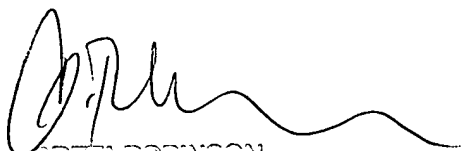
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (571) 272-4107. The fax number to this Art Unit is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
March 04, 2005

  
JOHN E. BREENE  
SUPERVISOR